

Rue 1.1126

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113. A method for forming a low dielectric constant insulativ

structure disposed between a pair of conductive lines comprising:

providing the pair of conductive lines over a substrate, the conductive lines each having an upper surface;

forming a mass of a material over the substrate, the mass disposed over and between the pair of conductive lines;

planarizing the mass to a level about equal to the upper surfaces of the pair of conductive lines;

depositing a layer of insulative material; and

vaporizing at least a portion of the mass disposed between the conductive lines to form the low dielectric constant insulative structure therebetween, the structure comprising at least one void.

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114. The method of Claim 113 wherein forming a mass comprises providing a material comprising a mixture of a first material substantially vaporizable in an oxidizing atmosphere and a second material substantially not vaporizable in an oxidizing atmosphere.

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115. The method of Claim 114 wherein providing a material comprising a mixture comprises providing a mixture of a carbon comprising material and a silicon oxide material.

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116. The method of Claim 114 wherein providing a material comprising a mixture comprises providing a mixture of carbon and SiC_x, where "x" is a number between about 0.2 and 1.5.

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117. The method of Claim 113 wherein forming a mass of material comprises forming the mass by plasma decomposition of a hydrocarbon or halogen substituted hydrocarbon.

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118. The method of Claim 117 wherein forming the mass by plasma decomposition comprises forming a porous carbon mass.

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119. The method of Claim 113 wherein depositing a layer of an insulative material comprises depositing the layer prior to vaporizing the mass.

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120. The method of Claim 113 wherein forming a layer of an insulative material comprises forming a silicon oxide layer having a thickness of about 500 Angstroms.

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121. The method of Claim 120 wherein forming a silicon oxide layer comprises forming the layer by sputter deposition of silicon dioxide.

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122. The method of Claim 113 wherein forming a layer of an insulative material comprises forming the layer after vaporizing the mass.

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123. The method of Claim 113 wherein forming a mass of material comprises forming the mass of a material comprising about 20% to about 80% SiC_x , where "x" is a number from about 0.2 to about 1.5.